

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A component transportation and installation device which transports and installs an installed component in an installation position of a receiving body, comprising:

a grip mechanism which grips the installed component, the grip mechanism comprising a dead man switch;

component transportation means for moving the grip mechanism with an actuator, the actuator comprising a first motor configured to move a slide table in a crosswise direction, a second motor configured to alter the elevation of a lifting table, a third motor configured to rotate a horizontal arm around a vertical shaft, and a fourth motor configured to rotate a vertical arm around an axis;

first actuator control means for controlling the actuator of the component transportation means according to a predetermined route and performing drive control to transport and install the installed component in the installation position; and

second actuator control means for performing assist control of the actuator of the component transportation means, and performing drive control in order to transport and install the installed component in the installation position,

wherein the dead man switch is configured to enable the first actuator control means when the dead man switch is not actuated and to enable the second actuator control means when the dead man switch is actuated.

2. (Currently Amended) A component transportation and installation method of transporting and installing an installed component in an installation position of

a receiving body using component transportation means having at least an actuator for transportation, comprising the steps of:

performing transportation and installation by selecting an actuator automatic control step of automatically transporting and installing the installed component in the installation position with controlling the actuator according to a predetermined route and an actuator assist control step of reducing a burden of a worker who performs transportation and installation operation of the installed component assist control of the actuator; and

switching between the actuator automatic control step and the actuator assist control step at any time according to a work condition by actuating a dead man switch configured to enable assist control when the dead man switch is actuated and to enable automatic control when the dead man switch is not actuated, and wherein the dead man switch is configured to be actuated at every point during the transportation and installation;

moving a slide table in a crosswise direction;

altering the elevation of a lifting table;

rotating a horizontal arm around a vertical shaft; and

rotating a vertical arm around an axis.

3. (Currently Amended) A component transportation and installation method including a step of installing an installed component, transported near an installation position, in a receiving body, comprising the steps of:

positioning the installed component in an installing section of the receiving body by operating the installed component transported near the installation position in an assist mode which can reduce a worker's burden, by actuating a dead man switch;

installing the positioned installed component in the receiving body automatically; and

moving a grip mechanism comprising the dead man switch, which grips the installed component after completion of installation to a predetermined position in an automatic mode, wherein the dead man switch is configured to enable the automatic mode when the dead man switch is not actuated and to enable the assist mode when the dead man switch is actuated;

moving a slide table in a crosswise direction;

altering the elevation of a lifting table;

rotating a horizontal arm around a vertical shaft; and

rotating a vertical arm around an axis.

4. (Currently Amended) A component transportation and installation device for installing an installed component in a receiving body, comprising:

a grip mechanism which can grip the installed component, the grip mechanism comprising a dead man switch;

component transportation means equipped with an actuator for transporting the grip mechanism, the actuator comprising a first motor configured to move a slide table in a crosswise direction, a second motor configured to alter the elevation of a lifting

table, a third motor configured to rotate a horizontal arm around a vertical shaft, and a fourth motor configured to rotate a vertical arm around an axis;

an installation mechanism which can perform installation work when the installed component is positioned in an installing section of the receiving body, and wherein the operation of the actuator of the component transportation means includes switching between an automatic mode and an assist mode; and

a control means performing control to select the assist mode when positioning at the installed component, wherein the control means is configured to enable the assist mode by actuating the dead man switch and to enable the automatic mode by no longer actuating the dead man switch.

5. (Currently Amended) A component transportation and installation method of repeatedly transporting at least two installed components in a component supply position toward an installation position including gripping the at least two installed components by a grip mechanism comprising a dead man switch while conveying a receiving body, which is given pitch feed, to the installation position sequentially, returning the grip mechanism to the component supply position at a time of completion of installing the at least two installed components in the receiving body, comprising the steps of:

making the grip mechanism free to perform switching between an automatic mode and an assist mode by actuating the dead man switch, as means of transporting the at least two installed components, and simultaneously performing switching to an automatic transportation mode after gripping the at least two installed components by

the grip mechanism and automatically transporting the at least two installed components at least nearby the installation position; and

making the grip mechanism return to the component supply position in the automatic mode when an installation of the at least two installed components is completed by releasing actuation of the dead man switch, wherein the dead man switch is configured to enable the automatic mode when the dead man switch is not being actuated and to enable the assist mode when the dead man switch is being actuated; and]

simultaneously transporting and installing the at least two installed components in the installation position in a stop period of one pitch feed of the receiving body;

moving a slide table in a crosswise direction;

altering the elevation of a lifting table;

rotating a horizontal arm around a vertical shaft; and

rotating a vertical arm around an axis by actuating a fourth motor.

6. (Currently Amended) A component transportation device for transporting and installing at least two installed components in a receiving body which is given pitch feed, comprising:

receiving body transportation means for performing pitch feed of the receiving body;

a grip mechanism which grips the at least two installed components in a component supply position; and

component transportation means equipped with an actuator and configured to transport the grip mechanism at least to an installation position in an automatic transportation mode or an assist transportation mode and to return the grip mechanism in the automatic transportation mode or assist transportation mode to the component supply position when installation is completed,

wherein the actuator comprises a first motor configured to move a slide table in a crosswise direction, a second motor configured to alter the elevation of a lifting table, a third motor configured to rotate a horizontal arm around a vertical shaft, and a fourth motor configured to rotate a vertical arm around an axis,

wherein the component transportation means is configured to control the grip mechanism to transport the at least two installed components in an installation position in a stop period of one pitch feed of the receiving body, and

wherein the dead man switch is configured to enable the automatic transportation mode when the dead man switch is not being actuated and to enable the assist mode when the dead man switch is being actuated.